

15W - 100W DIN Rail Mount Single Phase Power Supplies

<https://product.tdk.com/en/power/drb>
www.emea.lambda.tdk.com/drb



Industrial



Test



Semi-Fab



The DRB series supports the growing trend for simple and economically priced DIN power supplies for industrial and process control applications. The series combines low cost, reliability and compact dimensions with energy saving efficiencies of up to 91%. Conservatively rated electrolytic capacitor temperatures offer improved field life-times of up to 10 years. Available in four power levels, 15W, 30W, 50W, 100W, the series provides a choice of 5, 12, 15, 24 and 48V outputs. UL1310 Class 2 models and Class 1 Div 2 (ISA 12.12.01) certifications are available.

Features	Benefits
• High Efficiency, up to 91%	• Lowers Operating Costs and Improves Thermal Performance
• Narrow Case Widths	• Increases Available Space on the DIN Rail
• Curve B Radiated and Conducted EMI	• Reduced Electrical Noise in the System
• Low No Load Power Draw	• Saves Energy
• UL1310 Class 2 Compliant Models	• Suitable for Building Automation requiring NEC Class 2
• Class 1 Div 2 Compliance	• For Use in Explosive Atmospheres

Model Selector								
Model	Output Voltage (V)	Adjustment Range (V)	Maximum Current (A)	Maximum Power (W)	Ripple & Noise (mV)	Overvoltage Protection (V)	Efficiency (%) (115/230Vac)	UL1310 Class 2
DRB50-5-1	5	5 - 5.5	6	30	30	5.75 - 6.75	79 / 80	No
DRB30-12-1	12	12 - 15	2.5	30	40	15.96 - 18.72	86 / 88	Yes
DRB50-12-1	12	12 - 15	3.4	51*	20	15.96 - 18.72	88 / 90	Yes
DRB50-15-1	15	12 - 15	3.4	51*	20	15.96 - 18.72	88 / 90	Yes
DRB15-24-1	24	24 - 28	0.63	15.1	20	30 - 33.6	87 / 90	Yes
DRB30-24-1	24	24 - 28	1.25	30	30	30 - 33.6	88 / 90	Yes
DRB50-24-1	24	24 - 28	2.1	50.4	30	30 - 33.6	88 / 90	Yes
DRB100-24-1	24	24 - 28	4.2	100.8	30	30 - 33.6	90 / 91	No
DRB50-48-1	48	48 - 52.8	1.05	50.4	40	53.76 - 68.16	90 / 91	Yes

* Maximum power is 51W at 15V output, 40.8W when set at 12V output

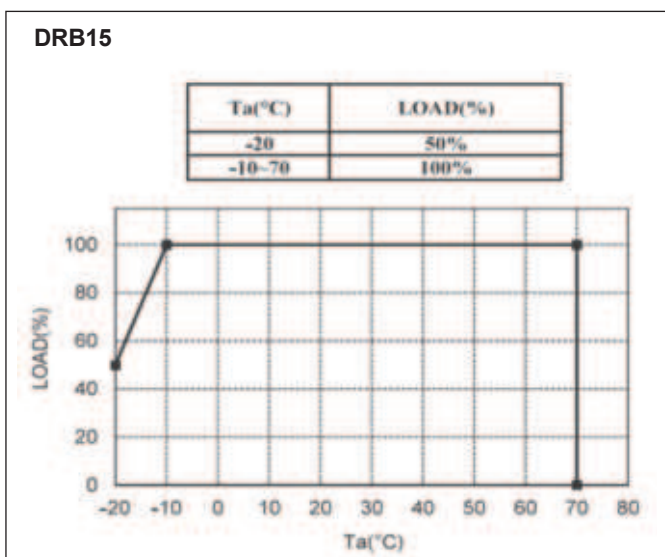
Specifications

Model		DRB15		DRB30		DRB50		DRB100	
Input									
AC Input Voltage Range (Operating)	Vac	85 - 265							
Nominal Input Voltage Range	Vac	100 - 240 (Note: Safety certified for 90 - 264Vac only)							
DC Input Voltage Range ⁽¹⁾	Vdc	120 - 373 (Note: Safety certified for AC input only)							
Input Surge Voltage	-	Withstands 300Vac for 5 seconds							
Input Frequency	Hz	47 - 63 (Note: Safety certified for 50/60Hz only)							
Input Current (110/230Vac)	A	0.27 / 0.17	0.55 / 0.33	0.9 / 0.55	1.2 / 0.6				
Inrush Current (Cold Start)	A	35	40	50	40				
Leakage Current (240Vac)	mA	<1.5	<1.5	<0.55	<1.5				
Power Factor (110/230Vac)	-	0.55 / 0.42	0.56 / 0.46	0.6 / 0.5	0.98 0.93				
Harmonic Compliance	-	Meets EN61000-3-2 Class A							
No Load Power Consumption	W	<0.3	<0.3	<0.3	<0.5				
Hold Up Time (230Vac input)	ms	>20							
Efficiency	-	See model selector table							
Average Efficiency (230Vac)	%	88	87 / 89	87 / 88	87				
Conducted & Radiated EMI	-	EN55011-B, EN55032-B, VCCI-B, FCC-B							
Immunity	-	See immunity table							
Safety Agency Certifications and Markings	-	IEC/EN/CSA/UL62368-1, 60950-1, BIS IS 13252(Part 1) (24V models only) , UL508 Listed, UL1310 Class 2 (see model selector), Class 1 Div 2, Group A, B, C, D (ISA 12.12.01), CE Mark and UKCA Mark							

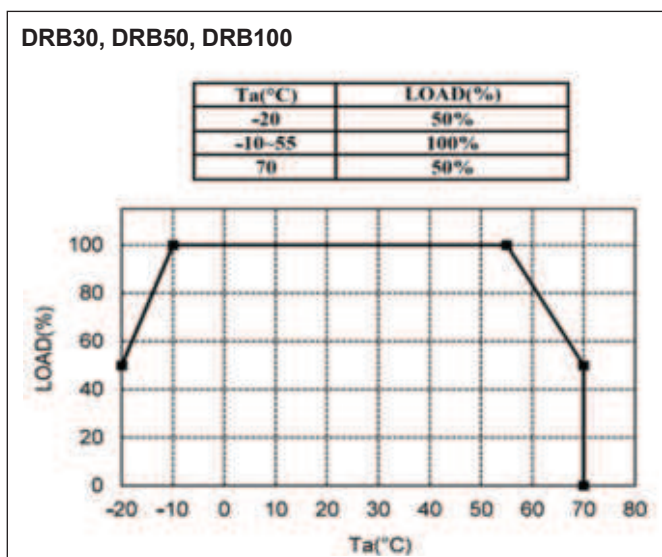
Immunity

Test	Standard	Test Level	Criteria	
ESD	EN61000-4-2	4	A	-
Radiated Susceptibility	EN61000-4-3	3	A	-
Electrical Fast Transient Burst	EN61000-4-4	4	A	-
Surge	EN61000-4-5	3	A	-
Conducted Susceptibility	EN61000-4-6	3	A	-
Magnetic fields	EN61000-4-8	4	A	-
Voltage dips and input interruptions	EN61000-4-11	0% for 1 cycle	A	-
		40% for 10/12 cycles	B	-
		70% for 25/30 cycles	B	-
		80% for 250/300 cycles	B	-
SEMI F47 Line Dip	SEMI F47	-	-	> 200Vac input

Output Temperature Derating



Output Temperature Derating



Specifications					
Model		DRB15	DRB30	DRB50	DRB100
Output					
Output Voltage Adjustment	V	See model selector			
Switching Frequency	kHz	100 (Fixed)	100 (Fixed)	75 - 170 (Variable)	100 - 150 (Variable)
Line Regulation	mV	5V: 50, 12-15V: 150, 24V: 240, 48V: 480			
Load Regulation	mV	5V: 50, 12-15V: 150, 24V: 240, 48V: 480			
Ripple & Noise (max) (typ)	mV	See model selector			
Temperature Coefficient	%/°C	<±0.02			
Minimum Load	-	No minimum load required			
Overcurrent Protection	-	Hiccup with auto recovery			
Overvoltage Protection	V	See model selector. Latching, cycle AC to reset.			
Overtemperature Protection	-	-			
Remote Sense	-	-			
Remote On/Off	-	-			
DC Good	-	-			
Indicators	-	Green LED indicates DC is OK			
Parallel Operation	-	Not possible			
Environmental					
Operating Temperature (2)	°C	-20 to +70 (see derating curves below). For operation below -10°C, start up load is derated linearly to 50% load down to -20°C			
Storage Temperature	°C	-40 to +85			
Humidity (non condensing)	%RH	5 - 95 (Operating & Storage)			
Cooling	-	Convection			
Altitude	m	3,000			
Withstand Voltage (For 1 minute)	Vac	Input to Output 3k (20mA), Input to GND 1.5k (20mA), Output to GND 500 (100mA)			
Isolation Resistance	MΩ	Input-FG, Input-Output & Output-FG: More than 100MΩ (500VDC) at 25°C and 70%RH			
Vibration (Non operating)	-	10-55Hz (sweep for 1min.) 19.6m/s ² (2G) Constant, X, Y, Z each 1hr			
Shock	-	294m/s ² (30G) 11ms half-sine			
Other					
Weight (Max)	g	85	95	175	300
Size (WxHxD)	mm	18 x 75 x 90	21 x 75 x 90	30 x 75 x 90	45 x 75 x 100
Size (WxHxD)	Inches	0.71 x 2.95 x 3.54	0.83 x 2.95 x 3.54	1.18 x 2.95 x 3.54	1.77 x 2.95 x 3.94
Case Material	-	Flame Retardant Polycarbonate (UL94 V-0)			
DIN Rail Type	-	Suitable for mounting on TS-35/7.5 or TS35/15 DIN Rails			
MTBF - JEITA (RCR-9102B) (3)	Hours	451,977	384,855	283,620	210,505
Warranty	Years	3			

Notes

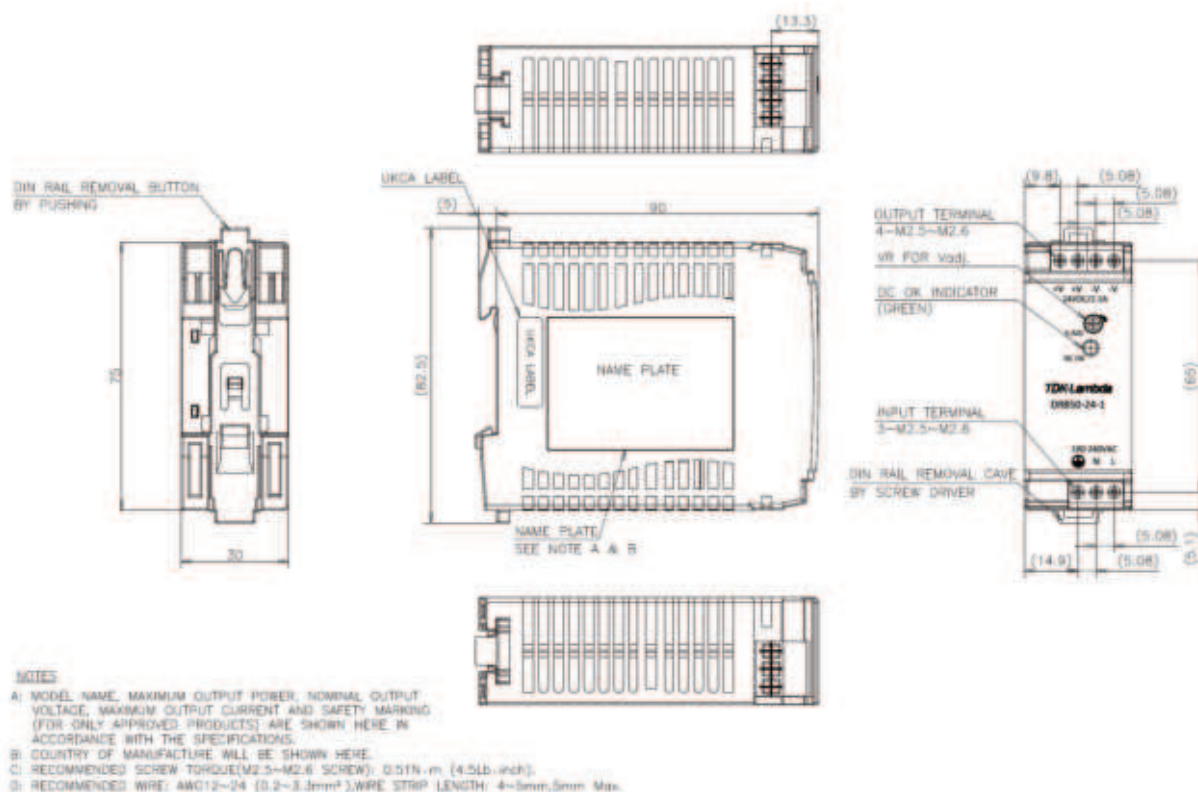
See website for detailed specifications, test methods and installation manual

(1) Consult Tech Support for use under DC input conditions. Safety certified for AC input only

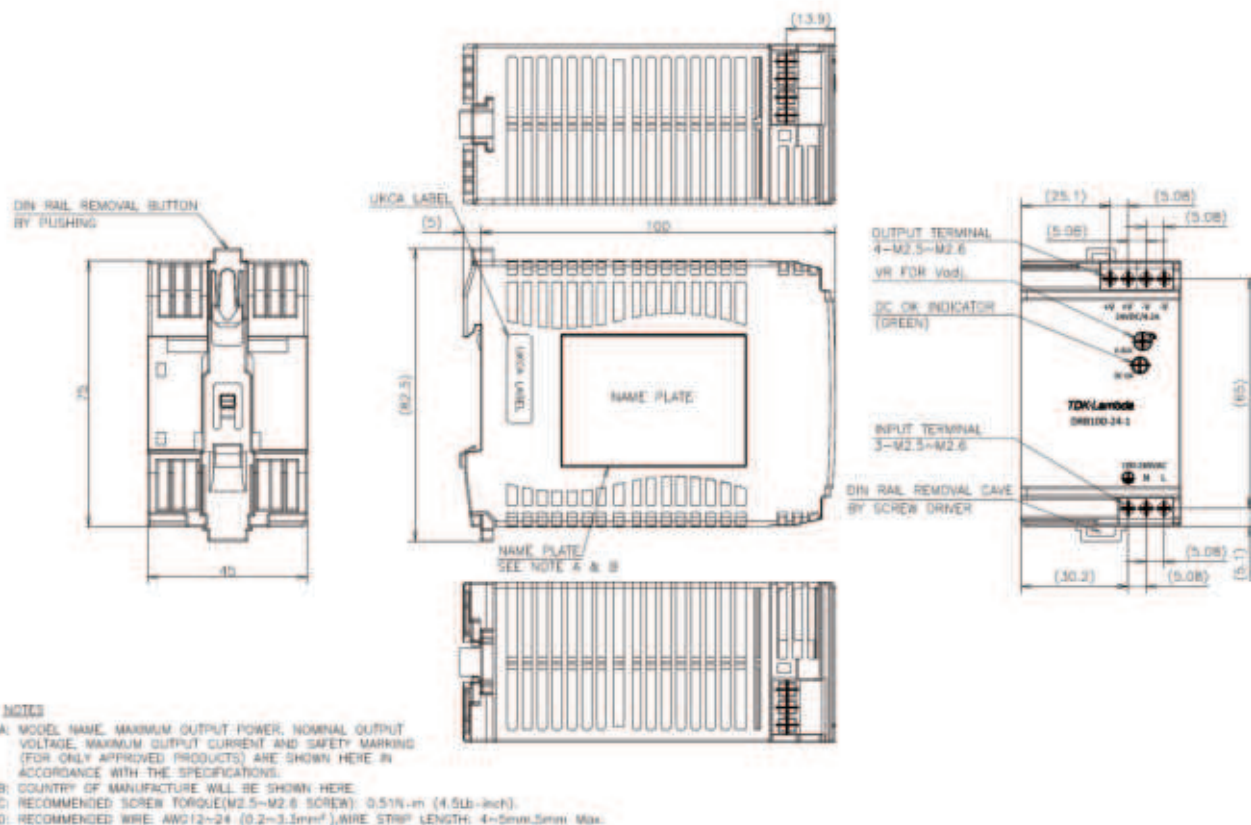
(2) Low temperature start up: -40°C typical

(3) The JEITA RCR-9102B calculation method produces figures significantly lower than Telcordia

Outline DRB 50



Outline DRB 100



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